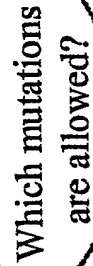


## Which mutations affect function?



|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | T | S | I | L | G | V | A | S | S | A | S | L | L | G | V |
|   | I | T | V |   |   |   |   | P | N | G | T | Y |   |   |   |
|   | L | A |   |   |   |   | R |   |   | M | N |   |   |   |   |
|   |   | H |   |   |   |   |   |   |   | I | E |   |   |   |   |
|   |   | M |   |   |   |   |   |   |   | L | R |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   | Y |   |   |   |   |   |

## FIGURE 2

|                             |       | Section 1   |          |           |           |                       |
|-----------------------------|-------|-------------|----------|-----------|-----------|-----------------------|
|                             |       | (1)         | 10       | 20        | 30        | 40                    |
| BL A sobria CAA56561 1      | (1)   | --MKQTRALP  | ELLALGTL | LLAP---   | LSLAAPVD  | PLKAVVDDAIRPV         |
| BL E cloacae P05364 1       | (1)   | --MMRKSLLCC | ALLLG--- | ISCSALAT  | FPVSEKQLA | EVVANTITFL            |
| BL E coli CAB36900 1        | (1)   | --MMKKSLLCC | ALLLT--- | ASFSTFAA  | AKTEQQIAD | IVNRTITFL             |
| BL O anthroci CAC17622 1    | (1)   | MRTSTLLIG   | FLTTAAVI | PNNGALA   | ASKVNDGDL | RRIVDETVP             |
| BL P aerocinosa S13408 1    | (1)   | MRDTRFEL    | CLCGIAST | LLFATT    | PAIAGEAP  | ADRLKALVDA            |
| BL S enteriditis CAA76196 1 | (1)   | --MKKSLSAT  | LISA---- | LLAFSAP   | GFSAADNVA | AVVDSTIKP             |
| BL Y enterolitica P45460 1  | (1)   | --MMKKSII   | INTLI    | FTSIAT    | FPLYTLAQ  | TKLTELQVAT            |
| Consensus                   | (1)   | MKKSLL      | LL       |           | A         | E QLA IVD TI PLM Q IP |
|                             |       | Section 2   |          |           |           |                       |
|                             |       | (53)        | 53       | 60        | 70        | 80                    |
| BL A sobria CAA56561 1      | (48)  | GMAVAVL     | KGGQAHY  | FNYGLAD   | VATGAKVNE | QTLFEIGSV             |
| BL E cloacae P05364 1       | (47)  | GMAVAVI     | YQGGKPHY | YTFGKADIA | ANKPVT    | PQTLFELG              |
| BL E coli CAB36900 1        | (47)  | GMAVAVI     | YQGGKPHY | YTFGKADIA | NNHPT     | QTLFELG               |
| BL O anthroci CAC17622 1    | (53)  | GMAVAIT     | IDGKSHFF | YGVSASK   | ESGQKVTE  | DITIFEIGSV            |
| BL P aerocinosa S13408 1    | (53)  | GLAVAI      | SLKGEPHY | FSYGLASK  | EDGARVTP  | PETLFEIGSV            |
| BL S enteriditis CAA76196 1 | (48)  | GMAVAV      | SVKGPYY  | FNYGFAD   | IQAKQPV   | TENTLFEIGSV           |
| BL Y enterolitica P45460 1  | (52)  | GMAVAV      | YDQKPP   | QFFNYG    | MAIDIKAGR | PVTENTLFEIGSV         |
| Consensus                   | (53)  | GMAVAV      | GKPHYF   | YGLADI    | AG        | PVTEQTLFELGSV         |
|                             |       | Section 3   |          |           |           |                       |
|                             |       | (105)       | 105      | 110       | 120       | 130                   |
| BL A sobria CAA56561 1      | (100) | VKGGFKL     | DDQVSG   | HAPWLK    | GSAPDGI   | TMAELATYS             |
| BL E cloacae P05364 1       | (99)  | ARGEISL     | DDAVTRY  | WPQLTG    | KQWQGI    | RMLDLATY              |
| BL E coli CAB36900 1        | (99)  | ARGEIKL     | SDPVTKY  | WPELTG    | KQWQGI    | RMLDLATY              |
| BL O anthroci CAC17622 1    | (105) | ATGAFSL     | SDPVTKY  | WPELTG    | KQWQGI    | RMLDLATY              |
| BL P aerocinosa S13408 1    | (105) | TQDKMRL     | DDRASQ   | HWPALQ    | GSRRDGI   | SLLDLATY              |
| BL S enteriditis CAA76196 1 | (98)  | AKKEMAL     | NDFAAKY  | QPELAL    | PQWKGIT   | LTLDLATY              |
| BL Y enterolitica P45460 1  | (104) | QTGIMNL     | NDPVTET  | YAPELT    | GSQWKDV   | KMLHLATY              |
| Consensus                   | (105) | AKG M L     | DEVTKY   | PEL       | GSQW      | GITMLDLATY            |
|                             |       | Section 4   |          |           |           |                       |
|                             |       | (157)       | 157      | 170       | 180       | 190                   |
| BL A sobria CAA56561 1      | (151) | TMRAYYR     | HWTFBY   | QAGTQR    | QYNSNPS   | ISGLFGHLA             |
| BL E cloacae P05364 1       | (150) | SLLRFYQ     | NWQFQ    | WKPPT     | TRLYANAS  | ISGLFGALAV            |
| BL E coli CAB36900 1        | (150) | ALLHIFY     | QNWQF    | QWTPG     | AKRLYANS  | ISGLFGELAV            |
| BL O anthroci CAC17622 1    | (156) | SMLAYF      | KKNWKE   | DYPAGT    | QRRYSNPS  | ISGLFGYLA             |
| BL P aerocinosa S13408 1    | (157) | QIRDYYR     | QWQFTY   | APGSR     | LYSNPS    | ISGLFGYLA             |
| BL S enteriditis CAA76196 1 | (149) | DLLNIFY     | QWQFQ    | PSRKP     | PGDMRLY   | ANSISGLF              |
| BL Y enterolitica P45460 1  | (155) | SLWQYY      | QWQFQ    | PNWAPG    | VMRNYSN   | ASISGLF               |
| Consensus                   | (157) | SLL YQ      | NWQF     | P         | PGT RLYSN | ASISGLF               |
|                             |       | Section 5   |          |           |           |                       |
|                             |       | (209)       | 209      | 220       | 230       | 240                   |
| BL A sobria CAA56561 1      | (203) | LGLEHTY     | LQVPEA   | AMARYA    | FGYSKED   | KPIRVNPG              |
| BL E cloacae P05364 1       | (202) | LKLDHTW     | INVPKAE  | EAHYANG   | YRDG-K    | AVRVSPG               |
| BL E coli CAB36900 1        | (202) | LKLAHTW     | ITVTPQ   | NEQKDY    | ANGYREG   | -KPVHVS               |
| BL O anthroci CAC17622 1    | (208) | FGLKNTF     | FINVPS   | ESQMNKY   | AYGYSK    | ANKPPIRV              |
| BL P aerocinosa S13408 1    | (209) | LGLEQTH     | LQVPEA   | ALAQAQ    | QYGGKDD   | DRPLRVG               |
| BL S enteriditis CAA76196 1 | (201) | LGLSHTF     | ITVPSA   | QSQAQY    | GYKKNK    | -KPVRVSP              |
| BL Y enterolitica P45460 1  | (207) | LKLDHTF     | ITVPSA   | QSQAQY    | GYKKNK    | -KPVRVSP              |
| Consensus                   | (209) | LGLDHTF     | I VPEA   | ANYAWG    | YK G      | KPVRVSPG              |
|                             |       | Section 6   |          |           |           |                       |
|                             |       | (281)       | 281      | 270       | 280       | 290                   |
| BL A sobria CAA56561 1      | (255) | FVKANIS     | ---      | GVDDK-AL  | QQAIALT   | HTGTFYR               |
| BL E cloacae P05364 1       | (253) | WVMANMA     | PENVA    | DA--SLK   | QGIALA    | QSRYSR                |
| BL E coli CAB36900 1        | (253) | WVMANMA     | PENVA    | DA--SLK   | QGIALA    | QSRYSR                |
| BL O anthroci CAC17622 1    | (260) | FVSLNID     | S--SLEL  | -DFQKA    | VAATHT    | GYHYVGA               |
| BL P aerocinosa S13408 1    | (261) | FVDANL      | HP--ER   | LDR-PWA   | QALDATH   | RGYKVGDM              |
| BL S enteriditis CAA76196 1 | (252) | WAEMNME     | PSRAGNA  | --DLEM    | AMYLQAT   | RYKTA                 |
| BL Y enterolitica P45460 1  | (258) | FMQANMD     | PESLPA   | GNDKLKE   | AIASQSR   | YFQAGDM               |
| Consensus                   | (261) | FV ANMDP    |          | L         | QAIALTQ   | SRYRIGDM              |
|                             |       | Section 7   |          |           |           |                       |
|                             |       | (313)       | 313      | 320       | 330       | 340                   |
| BL A sobria CAA56561 1      | (303) | LLAGNSP     | AVSLKAN  | FPVTKF    | ETPAAPG   | AMRLYNK               |
| BL E cloacae P05364 1       | (303) | VVEGSDS     | KVALAP   | LPVAVEN   | PPAPVKA   | SWVHKTG               |
| BL E coli CAB36900 1        | (303) | IINGSDS     | KVALAAL  | PAVEVNP   | PAVAVKAS  | SWVHKTG               |
| BL O anthroci CAC17622 1    | (309) | LLAGNSD     | SMALKS   | HRIKFD    | TFRQPSA   | DVWLNKT               |
| BL P aerocinosa S13408 1    | (310) | LQAGNST     | PMALQPH  | RIARLP    | APQALG    | QRLNKTG               |
| BL S enteriditis CAA76196 1 | (302) | IINGVTN     | NEVALQ   | PHVPTDN   | -QVQPYN   | RASWVHKT              |
| BL Y enterolitica P45460 1  | (310) | VIADSGN     | DIALKPR  | KXVEAL    | VPAQPA    | VRASWVHKT             |
| Consensus                   | (313) | LIAG SS     | VAL P    | P V L     | P P       | KASWVHKTG             |
|                             |       | Section 8   |          |           |           |                       |
|                             |       | (365)       | 365      | 370       | 380       | 390                   |
| BL A sobria CAA56561 1      | (355) | GIVMLAN     | RNYPIE   | ARVSA     | AHAILSQL  | AP-----               |
| BL E cloacae P05364 1       | (355) | GIVMLAN     | TSYPNP   | ARVSA     | AHAILSQL  | AP-----               |
| BL E coli CAB36900 1        | (355) | GIVMLAN     | TSYPNP   | ARVSA     | AHAILSQL  | AP-----               |
| BL O anthroci CAC17622 1    | (361) | GIVLLAN     | RNYPIE   | ARVSA     | AHAILSQL  | AP-----               |
| BL P aerocinosa S13408 1    | (362) | GLVILAN     | RNYPIE   | ARVSA     | AHAILSQL  | AP-----               |
| BL S enteriditis CAA76196 1 | (353) | AIIVILAN    | KNYPN    | TERVKA    | AQAISALE  | -----                 |
| BL Y enterolitica P45460 1  | (362) | GIVMLAN     | KNYPN    | TERVKA    | AQAISALE  | -----                 |
| Consensus                   | (365) | GIVMLAN     | KNYPN    | RV        | AAV IL    | AL                    |